

THE  
BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXXXIX.]

THURSDAY, SEPTEMBER 4, 1873.

[ No. 10.

**Original Communications.**

**ON THE SMALLPOX EPIDEMIC IN BOSTON, IN 1872-73.**

Read before the Massachusetts Medical Society, June 3, 1873.

By M. E. WEBB, M.D. Bowd., of Boston.

[Concluded from p. 205.]

THE remarkable intensity of the variolous poison was still farther attested by the unprecedented number of recurrent cases; the writer personally witnessed thirty-eight cases, which presented scars of former recoveries; three of these had the disease twice within three months. The following notes are introduced to illustrate this interesting feature of the epidemic.

Mrs. M. F., aged 39, married, had smallpox twelve weeks ago, and was treated by Dr. White. Diagnosis verified by Dr. Green. Case not removed, and several cases resulted in the same house, receiving the contagion from her; two of these came to the hospital for treatment.

On Sunday, Sept. 22, she was delivered of a dead fœtus, at the eighth month of pregnancy; hæmorrhage not excessive, but there was great exhaustion.

On the Tuesday following, an eruption appeared. Dr. Street, her physician at this time, reported it as a case of smallpox. On the afternoon of the same day, I saw the case with Dr. Green. There was an eruption over the entire body, with, here and there, thickly accumulated patches, especially upon the abdomen, besides several large blebs filled with bloody serum, the whole surface presenting a lobster red appearance. Uterine hæmorrhage small, but exhaustion extreme; frequent collapse on movement; great dyspnœa; pulse rapid and feeble; tongue dry. The symptoms indicated immediate dissolution.

The cicatrices of the first attack were faint, on account of the erythema; but they were perceptible.

She was attended, both times, by the same woman, an old, experienced smallpox nurse, who was greatly surprised on being called upon, the second time, to attend the same patient for the same disease.

Since the publication, last year, in this JOURNAL,\* of a case of re-

\* See Journal of June 6th, 1872.

current smallpox, another one has come to my knowledge, having some connection with the case published.

E. M., aged 4, was taken sick, March 22d, 1872. The mother of this child was very intimate with the mother of the child above referred to as previously reported; she had visited and had even held E. M. in her lap, when her own child was sick at home with the first attack of variola. On the 25th, an eruption appeared, just three days after the primary symptoms. Dr. Granger, the family physician, was called, and pronounced it smallpox and reported it as such.

Dr. Green, City Physician, saw the case and examined it carefully, and had no doubt that the diagnosis was correct. The child recovered, and enjoyed good health during the summer.

October 24th, the child was again taken sick, and in two days an eruption appeared. Dr. Granger was again called, and again diagnosed smallpox and reported it.

Dr. Green saw the child on October 31st, and informed me of the case, saying that he recalled the circumstances of the first attack, the preceding March. I saw the case November 4th, and certainly there was no doubt this time, as the child was *in articulo mortis*, with confluent smallpox.

This child had been vaccinated when very young, and the mother said had a very sore arm, but, of course, no cicatrices were visible.

In addition to these cases, I have also seen three instances with the third attack, and have full records of two cases with evidence sufficient to prove the fact, one having two good marks of vaccination performed before either attack; the other, one fair mark. The history of the one having two marks is as follows:—

Mrs. N. D., aged 24, married, native of Dover, N. H.; when not quite a year old, her sister had smallpox, and she, with her mother, took the disease, in a light form, and was removed to the pest-house in Dover. She had been previously vaccinated, and to this day shows two fair cicatrices.

At the age of 14, while attending school in Manchester, N. H., she had the second attack. The prodromata were quite severe, but she kept up as long as possible in order not to lose her place in her class. She was finally obliged to keep her room, and a Dr. French was called in. He pronounced it smallpox. There were, at that time, a few sporadic cases there. She had varicella in the interval, and shows some few marks, beside two sets of scars undoubtedly variolous.

I saw the patient December 24, 1872, and she was then suffering from the discrete form of the disease; the eruption was in the pustular stage and was commencing to desquamate upon the face, it being then the seventh day of the eruption. The primary fever was high, with severe head-ache, back-ache, &c.

This case was one of uncomplicated variola discreta, but it was

much more severe than the previous attacks. I have seen this patient since her recovery, and she is considerably marked from the last attack.

For further details, I am obliged to rely on the figures of the three hospitals within the city limits.

Of those treated, about sixty per cent. were American born, fifteen per cent. were from the British Provinces, fifteen per cent. were from Ireland, and ten per cent. were from other parts of the world, the death-rate being in about the same proportion.

Again, the highest death-rate was in the male sex.

Number of males treated, 538.

Number of deaths, 127.

Percent. of mortality, 23.60.

Number of females treated, 180.

Number of deaths, 58.

Percent. of mortality, 18.83.

As might be expected, the death-rate was exceedingly large among the unvaccinated.

Number of unvaccinated, 113.

Number of deaths, 55.

Percent. of mortality, 48.76,

or nearly one half.

Number of vaccinated, 690.

Number of deaths, 130.

Percent. of mortality, 19.55,

or 29.21 per cent. less than death-rate among the unvaccinated.

Number of re-vaccinated, 84.

Number of deaths, 15.

Percent. of mortality, 17.85,

or 1.70 per cent. less than under head of vaccinated.

For the purpose of showing the value of the vaccine scar, we subjoin the following statistics:—

Number having one (1) scar, 413.

Number of deaths, 52.

Percent. of mortality, 12.06.

Number having two (2) scars, 103.

Number of deaths, 8.

Percent. of mortality, 7.76,

or 4.30 per cent. less than those having only one cicatrix.

Number having three (3) scars, 36.

Number of deaths, 0.

Number having four (4) scars, 3.

Number of deaths, 0.

Number having five (5) scars, 3.

Number of deaths, 2.

One of these had five marks from primary vaccination, and had a discrete form of the disease, and recovered. The other two had three marks from primary vaccination, and two from re-vaccination within three years—both had the hæmorrhagic form, and both died.

One patient had six marks, three primary and three secondary, the result of re-vaccination last November. One had eight good marks, which he had borne from infancy. These last two had the disease in a mild form, and made good recoveries.

So many theories have been advanced in relation to the subject of vaccination, that absolute truth is reached with difficulty. That it is the only preventive known, and that it is one of the grandest advances ever made in medical science, in saving life and preventing human suffering, all acknowledge; that it has done so in the late epidemic is satisfactorily proved by the records. Allowing this and even more, that it is far better to protect than previous attacks of smallpox, it has not proved an entire safeguard. The many cases of recurrent smallpox, including some instances of young children previously vaccinated and re-vaccinated, certainly point to the conclusion that there are persons so susceptible to the influence of variolous poison that no amount of vaccination or previous attacks would prevent the disease, if these persons were exposed to the contagion.

Regarding the scar, we have hesitated to make a favorable prognosis upon that alone, in the earlier stages, whether the patient had or had not one or two or even five good, fair or poor marks upon the arm; and the fact that physicians and nurses who have constantly been exposed to the contagion, and in two instances under my own observation have been inoculated with the virus upon abrasions of the hand, while they showed no trace of a vaccine cicatrix, yet have not suffered from the disease, is certainly strong evidence that vaccination may protect without any external mark whatever.

A valuable paper, read by Dr. B. E. Cotting before the Boston Society for Medical Improvement, and published in this JOURNAL, April 25th, 1872, seems to prove this fact conclusively. In the experiments, under his instruction, by Dr. J. H. Davenport, of this city, a new method was devised and performed for the sole purpose of proving that a person could be successfully vaccinated without the vaccination in the least showing itself, or leaving a trace upon the external surface. The lymph was inserted into the arm by means of a hypodermic syringe with a long needle, and was carried underneath the skin as far as possible from the point of puncture, in order that external pock might be prevented, and, consequently, protection gained without a scar. His procedure is wholly different from that of Clemens and others in Germany, whose object was merely to deposit the lymph in the cellular tissues directly under the wound, with the expectation that pock would form externally around the puncture, as actually occurred whenever their operation was successful.



Re-vaccination has been extensively performed, and has, no doubt, saved many who otherwise might have had the disease. While, in epidemics, this may be imperative, the view that it should be done every three or five years, should be received with hesitation. If properly done in infancy, and at least faithfully attempted again after puberty, it ought to be sufficient, except, perhaps, in epidemics, or among people living in tenement houses where the disease exists; in these conditions, re-vaccination should be performed whether one, three, or five years had intervened since the last introduction of vaccinia.

Both animal and humanized virus have been used, but there are no data to lead to correct conclusions as to the relative protective value of the two. For my own part, I am fully committed to the use of animal virus, for the reason, in the first place, that there is no danger of introducing syphilis or other diseases, a danger which does undoubtedly occur, though not so frequently as many suppose; and, secondly, because I consider its protective power greater. I have yet to see the first case of variola, in any form, among the thousands that have been vaccinated with what was known to be animal virus, including over eight hundred cases in my own practice where this has been used. The nearest approach to it is the fact that several cases have been noted where the disease existed, and was attributed to the bad pock used, or in other words, to inoculation with variola, the eruption making its appearance on the eleventh or twelfth day after vaccination. These are not true instances, for the reason that these cases were seen generally upon the fourth day of the disease and were probably vaccinated two or four days after receiving variolous contagion, and, under those circumstances, we should not expect to do more than modify the progress of the variola.

For complications, beside those commonly seen, we have observed two conditions not referred to by authors in treatises upon small-pox.

In females, if the disease has been in any way severe, they have menstruated invariably during the primary fever; in girls, the first menstrual period came on, and in people near the climacteric, the catamenia appeared, when perhaps menstruation had been delayed for one year. So common has this been, that a diagnosis has been made upon this fact alone, that there was a flow of blood from the uterus occurring out of the regular time for the menstrual epoch. In some way, the poison seems to affect the uterus, and to exert a special action upon its functions.

In several cases, and always where the disease has been mild, and had passed regularly into the desquamative stage, suddenly, without a warning, or a perceptible cause, patients would have convulsions—inflammation of the brain or spinal cord—followed by paralysis, either complete or partial, and death in twenty-four or

forty-eight hours. In three instances, paralysis commenced in one leg, then the arm of the same side was affected; then the other leg and arm; then complete paralysis; the mind of the patient remaining clear to the last.

There were two cases that had paralysis without the first symptom of inflammation and both these died. An examination of the urine in these cases disclosed the fact that it was heavily loaded with albumen. No microscopical examination was made. This might have thrown some light upon this peculiar manifestation, as Bright's disease was suspected.

All the cases, some eight in number, that we have seen, proved fatal.\*

*Treatment.*—We will premise the discussion of treatment by giving a table of mortality-rates in the different places where the disease has been treated.

In the Albany Street hospital, which was open six months, the

Number of cases treated was 322.

Number of deaths was 76.

Per cent. of mortality, 23·60,

or nearly four per cent. less than the general average.

The highest mortality rate was at Galloupe's Island; here the

Number treated was 487.

Number of deaths, 182.

Per cent. of mortality, 39·59,

or nearly forty per cent., 15·99 per cent. larger than at the old Albany Street hospital.

The next largest death-rate was among those not removed.

Number treated at their own homes, 2,342.

Number of deaths, 659.

Per cent. of mortality, 27·09.

This is 12·5 per cent. less than that at the Island; yet the Albany Street hospital had an advantage of 3·5 per cent. over this.

At Hospital No. 1, (Swett Street),

Number treated, 233.

Number of deaths, 49.

Per cent. of mortality, 21·02,

or 18·57 per cent. less than at the Island,

7·07 " " " " among those not removed.

2·58 " " " " at the Albany Street hospital.

The lowest rate was at the Marcella Street hospital, or the old Roxbury Almshouse.

Number treated, 300.

Number of deaths, 60.

Per cent. of mortality, 20·00,

or 1·02 per cent. less than at the Swett Street hospital.

3·55 " " " " " Albany Street hospital.

---

\* See reports of similar cases in this Journal, May 8th, May 22d and Aug. 7th, 1873.

7.04 per cent. less than among those not removed.  
19-54 " " " " at the Island.

Allowing that the city had possessed a hospital like this latter at the commencement of the epidemic, and that all the cases had been treated there, we find that one hundred and ninety human lives might have been saved in this way alone. In comparison with the death-rate at the Island, we find that eighty-five lives might have been saved, that died after transportation there. By these figures, it is evident that removal to a good hospital, on main land, is far better, for mortality rates, than allowing patients to remain at home; and the better the hospital, the less the percentage of deaths.

First, then, in the matter of treatment, is a hospital located where the land is high, dry and healthful, with high rooms, properly warmed, and ventilated, and sufficiently numerous to enable proper classification of the cases; they should be supplied with every convenience which modern science has invented that will add to the comfort and happiness of its inmates. The surroundings should be pleasant, so that patients can feel that, instead of a "pest-house," they have a home, where the most delicate and sensitive can be so separated from the wards, that they will not be continually shocked by scenes of suffering and of death. Having such an institution, well supplied with watchful and attentive nurses, both night and day, full preparation is made for a hand-to-hand conflict with the disease.

Most of the patients are in the second stage, or that of the eruption, on admission, and require before the eighth day little or no treatment, except perhaps an opiate at night (as sleep is of great importance), and some mild laxative to keep the bowels in soluble condition. In the discrete form, this has been all the treatment required, guarding patients against the ravenous appetite they always have while convalescing. In the severer forms, we have, in addition, given quinine early, and through every stage of the disease, thus keeping the temperature low, and harboring strength for the suppurative stage. During the secondary fever, quinine in large doses, governed by the temperature, milk-punch, brandy, beef tea, and opiates (generally sulphate of morphia) were given freely. It has been sometimes surprising to see the rapid change of a patient, for the better, under the administration of five or even ten grains of quinine every four hours, and  $\frac{1}{4}$  grain of morphia, as often; and instead of the high temperature,  $105^{\circ}$  to  $107^{\circ}$ , the rapid breathing, and the delirium, we would have a temperature of  $100^{\circ}$  or  $101^{\circ}$ , dyspnoea lessened, sleep produced; and our patient, having a new lease of life, would go on to convalescence and recovery. Patients have never been without milk, and have taken it ad libitum. Grapes, oranges, apples, and other fruit have been rationed out daily in all stages of the disease.

In the hæmorrhagic form, the same course has been followed, with

the addition of ergot, muriated tincture of iron, tannic acid and other astringents; but none of these have been of benefit.

Complications of the disease were treated upon general principles, never forgetting that the vital powers must be sustained.

Ulcerations of the cornea were treated by frequent cleansing of the eyes, application of weak astringent lotions, and keeping the pupils well dilated with atropine. Delirium, in the third stage, we considered as a cry of debilitated nature for support, and milk punch and beef-tea were urged more heroically.

To prevent pitting, an all important matter, various methods have been advised, many experiments made, and all with doubtful success. If the ulcerations extend deeply into the skin, nothing will prevent cicatrices remaining. Puncturing the vesicles, applying iodine, nitrate of silver, poultices, collodion, excluding the light by darkening the room, excluding the air by covering the face, have only succeeded in making our patient more uncomfortable, if possible, without preventing disfiguration; and latterly, were sorted only to emollient applications, and to frequent sponging with tepid water.

Our hospital solution to prevent itching was composed of carbolic acid, 3 ij.; olive oil, glycerine, in equal parts, 3 ij. This was applied with a soft brush.

In the three hospitals under our charge, we have used all kinds of disinfectants that are in the market, but as carbolic acid has proved the best in destroying all odors, we came, at last, to use no other. We sprinkled our wards with the solution, and our beds and bedding with the powder, made by rubbing up the acid with carbonate of magnesia; our earth and water closets were kept free of all odor by the lavish use of carbolic earth.

Bromo-chloralum has the advantage of being nearly odorless, and in private rooms where there was only one patient answered every purpose, but in wards is far inferior to carbolic acid.

The fumigation of houses, bedding, clothing, &c., has been performed by burning sulphur, and thoroughly saturating them with the fumes of sulphurous acid. This has been the only method used at the hospitals to disinfect clothing, and from the many patients that we have been obliged to send out with a portion of their garments worn in the hospital, not a case has resulted to my knowledge. Baking, or subjecting the cloth to a high temperature, has not been used here, but is no doubt an easy and efficient method.

In closing this report, I would remark that the great importance of every city and town of any size having a permanent and well organized hospital always at hand for any emergency cannot be too strongly urged upon the profession; for, much as I value vaccination, I consider isolation in times of an epidemic far better.\*

\* Dr. Robert H. Blakewell, in his monograph on "Smallpox in Trinidad," remarks:—

"I fear that in some instances wholesale vaccination and re-vaccination at the commencement of an epidemic, has spread smallpox among those who remained unvaccinated. At least it happened, curiously enough, that in the best vaccinated districts in Trinidad, there

A good hospital maintained for five years at an expense of five or even ten thousand dollars a year, without a patient, would be economy as a safeguard for times of need.

If the past epidemic teaches anything, it is not only the importance of having a board of health with special qualifications for that position, unbiased by political trickery or party influence, but the absolute necessity of having an established hospital for contagious diseases, within city limits and easy of access, where the sick poor can have the comforts of home. If Boston had had such a hospital, or had even availed herself one year ago, as later she was obliged to do, of the Roxbury almshouse, she never would have been scourged by the late epidemic, which has cost over one thousand lives, incurred directly an expense to be counted by hundreds of thousands of dollars, to say nothing of consequential damages to business, or of the anxiety of every household which dollars and cents cannot express; she might have saved herself the standing reproach of hundreds of municipalities not only in this state, but all over New England, which have suffered from this disease, and which trace the source of the contagion directly to the carelessness and neglect of Boston alone.

1282 Washington St., June, 1873.

---

TREATMENT OF NÆVI.—In a recent discussion before the Clinical Society of London, the President, Mr. Prescott Hewett, observed that it was often a matter of difficulty to know when and when not to remove nævus. A large number might be safely left alone until they began to grow. They not infrequently die out. He referred to the case of his own son, who was, as a child, the subject of a nævus of the size of a walnut on the forehead. It did not increase up to the age of four years, when he had an attack of whooping-cough, during which the nævus disappeared.

Mr. John Croft referred to a case in which a nævus gradually disappeared. Whenever a white spot indicating atrophy was observed upon the nævus he advised it to be left alone. In others, enucleation was, he thought, often the quickest mode of treatment.

Mr. Barwell was of opinion that cutaneous nævi before puberty generally disappeared, and often, also, subcutaneous ones. Deeper ones, as a rule, however, did not spontaneously cease to exist.—*Med. Times and Gazette*, June 14, 1873.

---

was the most smallpox. One gentleman, Mr. Robert Knaggs, reported that his district of the town was so well vaccinated in the house-to-house vaccination, 'that an epidemic was impossible.' A few weeks afterward, he had to resign that very district, because the number of cases of smallpox was so large that he was unable to attend on them. A very out-of-the-way district in a distant part of the island was entirely free from smallpox, until an energetic vaccinator, newly appointed, vaccinated upwards of a hundred in the course of three or four weeks. Smallpox then broke out. Certainly, smallpox spread with amazing rapidity in the Port of Spain after the house-to-house vaccination had been a short time in operation. It seems clear to me, that if you vaccinate five or six persons in a small hut, in five or six places each, you will have, at the end of a fortnight, a number of scabs equal to a mild attack of discrete smallpox, and that an unprotected person, living in such a house, will be liable to contract smallpox from these cases."

---

## Progress in Medicine.

---

### REPORT ON ANATOMY.

By THOMAS DWIGHT, JR., M.D.

#### METHODS.

THERE is but little to record under this head. Exner's admirable little manual for microscopical preparation, has been noticed in this JOURNAL (May 15th), and the review of Sanderson's Hand-book for the Physiological Laboratory will appear shortly. Mr. Needham writes in the *Monthly Microscopical Journal* for June, on methods of cutting sections, and Mr. Atkinson, in the same Journal for July, on the preparation of the brain and spinal cord for microscopical examination; neither, however, gives much that is new or original.

The *Quarterly Journal of Microscopical Science*, for July, contains a paper by David J. Hamilton, describing an apparatus which he has invented, for injecting by air-pressure, and which he considers an improvement on Ludwig's. The latter is very simple, consisting of a large receiver with a small neck which is connected by tubes with a water pipe on one side, and a small bottle holding the injecting fluid on the other. The latter is, in turn, connected by a pipe and fine nozzle to the object to be injected. By permitting the water to flow into the first receiver, the air is forced into the second, compresses the fluid and expels it through the escape pipe. Mr. Hamilton's apparatus is on the same principle; the power is obtained by tightening bands around an air bag, and it permits two fluids to be injected at once. There is also an arrangement for keeping the fluids and the specimen warm, if desired. This must be more expensive, but, except in convenience, not superior to Ludwig's apparatus, which can be easily modified, so as to accomplish as much as the other.

#### ANOMALIES.

The great attention given of late to anomalies, has brought them to light in such numbers, that it is impossible to mention any but the most important. Gruber describes (*Bulletins of the Academy of St. Petersburg*, vol. 18, No. 2) the fourth case he has observed of an additional carpal bone resulting from the subdivision of the scaphoid. Prof. Humphry's lecture on The Varieties in the Muscles of Man (*Brit. Med. Journal*, June & July), delivered before the Royal College of Surgeons on June 2d, 4th and 6th are, in some sort, a continuation of those on myology, given the year before. He then discussed the general laws regulating the arrangement of muscles, and now he considers the causes of exceptions. He finds little to support the view that variations are advantageous to their possessor; but, on the contrary, that those muscles are most frequently absent or modified, which can be most easily spared. The cause of these anomalies, appears to be an excess or a defect of segmentation. The lectures reviewed the chief variations in each part of the body, discussing their signification, and, finally, alluded briefly to several interesting questions which the subject suggested. He holds that the distribution of nerves to abnormal muscles, is too uncertain to be a safe guide to their homologies.



Some very interesting cases of deficiency of important muscles have been published by other observers. Dr. Yeo exhibited at the Clinical Society of London, Feb. 28th, an individual with complete absence of the pectoralis minor and of much of the sternal portion of the pectoralis major. The clavicular portion of the latter, and the latissimus dorsi were much hypertrophied. Prof. Drachmann (*Journal of Anat. & Phys.*, June, 1873) describes a case of congenital absence of the quadriceps extensor cruris in both legs, observed during life, on a woman of twenty-eight. The patellæ were present; they were small and movable, and apparently quite unattached to the tibiæ. Gruber (*loc. cit.*) reports a case of absence of the inguinal portion of the external oblique. The lower border of the muscle passed from just above the anterior superior spine of the ilium to a point in the linea alba, about five inches above the pubes. He describes many other muscular anomalies, of which one of the most curious is a tensor fasciæ suralis coming as usual from the semi-tendinosus, which it left in the upper part of the thigh. It soon became tendinous, and ran in a separate sheath to near the head of the tibia, where it became superficial to the deep fascia. Keeping in the middle of the back of the leg, it ended by expanding into the posterior part of the sheath of the tendo-Achillis. Dr. Curnon reports, in the last number of the *Journal of Anatomy and Physiology*, a remarkable variation in the external rectus of the eye, which had two extra bellies arising in common with its lower head. "The inner and shorter slip was inserted into the outer half of the cartilage of the lower eyelid, where it joined the larger and external slip, which was inserted into the periosteum of the outer wall of the orbit, as well as into the cartilage." We would suggest that the abnormal heads may be hypertrophies of the fibres sent to the septum orbitale.

The most noteworthy of the anomalies observed in the arterial system, are those described by Hillary in the *Canada Lancet*, for May. The axillary artery of both sides, divided at its second part into two trunks. The anterior divided near the elbow into the radial and ulnar; the posterior, on one side the larger of the two, supplied the upper arm and finally became the interosseous.

The reader will find accounts of various anomalies in the *Archives Néanderlaïses*, vol. 7, part 5, and in the *Lyon Médical*, of March 30, 1873. The muscular anomalies observed in the dissecting rooms at King's College, London, during the sessions of '68-'9, '69-'70 and '70-'71 have been collected by Mr. Perrin, and appear at intervals in the *Medical Times and Gazette*. The first of the series appeared Dec. 7, 1872. The last report of Guy's Hospital, that for 1872-3, contains a list of the anomalies observed in the dissecting room, from October 1870 to June 1872, by Davies Colley, F. Taylor and B. N. Dalton. Dr. J. J. Charles gives some notes of abnormal arrangement of the arteries of the arm, in the June number of the *Journal of Anatomy and Physiology*.

#### OSTEOLOGY.

Two temporal ridges of the human skull have been described by Hyrtl in the thirty-second volume of the *Memoirs of the Academy of Vienna*. Till now, but one has been known, and is usually considered as showing the line of origin of the temporal muscle; though, as our author points out, its course would necessitate astonishing



variations of the latter. He finds that there are usually two more or less perfect lines, the lower indicating the origin of the temporal muscle, the upper marking the boundary between the superior, or parietal, and the lateral, or temporal regions. The superior varies in position (being nearer the sagittal suture in narrow skulls, and further from it in round ones) far more than the lower, but is usually better marked and more rarely absent. Occasionally, but one is found, and very rarely both are wanting. The inferior ridge starts from the outer side of the external angular process of the frontal, runs backward across the lower part of the parietal, describing a curve with the convexity upward, but before reaching the back of the bone it turns forward and ends in the posterior root of the zygoma. *It does not touch the lambdoidal suture.* The superior line begins at the same point but runs higher on the side of the head, and finally strikes the lambdoidal suture.

Prof. Wenzel Gruber writes in *Du Bois Reymonds' Archiv*, 1872, Heft 6, on the position of the mental foramen. Finding it variously stated by different authorities, and thinking it possible that it might vary in different races, he examined 162 Russian heads. He found it most frequently below the second bicuspid, but, almost as often, below the septum, between the first and second bicuspids. In a series of over 1200 lower jaws he found it wanting but once, and then only on one side. It very rarely was double or triple.

Prof. Struthers (*London Lancet*, Feb. 15, 1873) reports a case tending to show that the supra-condyloid process of the humerus is an hereditary anomaly. The father of seven children had it on the left arm; three of the children had it on one side, and one on both. It is stated that unless very small, the process can be easily felt during life.

Dr. H. v. Jhering, in *Du Bois Reymond's Archiv*, 1872, heft 6, describes six centres of ossification for the frontal bone besides the two familiar ones. Of the new ones, two are in the nasal spine, one near the trochlear depression in the frontal plate of each side, and a more important one is in the external angle of each side.

*The origin of the normal curves of the human spine* is the subject of an excellent paper in Virchow's *Archives*, vol. 57, parts third and fourth, by Dr. Balandin of St. Petersburg. He gives a very interesting historical account of the state of the question, but does not appear to be acquainted with Bouland's paper, of which there is an abstract in our first report on anatomy (Sept. 1872). Not only are the causes of the curves matters of doubt, but also the time of their appearance. Our author made ligamentous preparations of the spinal column and thorax of fetuses, children and adults on which he studied the curves and then tested their stability by stretching the specimen as much as possible without injury. He found that the column of embryos of from two to three months presented a general curve which could be obliterated by extension. At from four to five months the curve had a longer radius, and on traction a concavity remained from about the seventh cervical to about the ninth dorsal vertebra. In older fetuses the results were similar, the cervical and lumbar regions becoming straight under traction, but the dorsal curve being more marked. When the child is about three months old the normal curve in the neck is first observed. It quickly consolidates so as not to admit of

straightening. At this age the lumbar region is normally straight; the curve does not appear till the beginning of the second year. The two superior curves become rapidly more and more stable, but the lumbar one may be straightened even to the twentieth year, and is not firm till growth is complete.

In considering the cause of the curves, the author devotes himself almost exclusively to the cervical and lumbar regions, expressing the opinion that the dorsal curve is the result of the confining influence of the walls of the thorax and of the pressure from the growth of the viscera which they enclose. The other curves may be said to be caused by an extension or straightening of the body. In the fetus *in utero*, the head and the legs are bent forwards, and it is necessary that they should both be brought back before the upright position can be maintained. The child begins to raise its chin from its breast during the third month, and it is in consequence of this that the cervical curve is formed by the spine bending forward to support the head. The cause of the lumbar curves requires a longer discussion, as the writer presents some quite original views. He first calls attention to the position which the body of a fetus, or of a very young child, assumes when laid on its back. The lumbar spinous processes rest on the table in a line with the dorsal ones, and the legs are rotated strongly outward, with the knees usually not touching the table. If the knees be brought together, they at once spring up further from the table, so that the thighs form a well-marked angle with the body. Now, if the knees, still kept together, be pressed down till they rest upon the table, the abdomen will become prominent and the spinal column will bend forward in the lumbar region. The same thing occurs after the removal of the muscles and viscera, and can be shown to depend on the shortness of the ilio-femoral ligaments. As the child learns to stand and to walk, and, finally, to be habitually on its feet, this force comes more and more into play, increasing the obliquity of the pelvis and the lumbar curve. Balandin regards as untrustworthy the measurements showing that any of the vertebral curves are due to difference in thickness of the anterior and posterior bodies of the vertebrae.

#### MYOLOGY.

*The Structure of Striated Muscular Fibre.*—Papers on this subject will be found in *Schultze's Archiv*, vol. 8, heft. 2, and vol. 9, heft. 2, by Merkel; in *Pflüger's Archiv*, vol. 7, heft 1 and vol. 7, heft 2 and 3, by Engelmann; in *Reichert and Du Bois-Reymond's Journal*, 1872, parts 5 and 6, by Sachs; and in the *Proceedings of the Royal Society of London*, April 3d, 1873, by Schäfer.

It seems desirable to attempt a general statement of the progress making towards the solution of this vexed question. Obscure as many points in it are, and diverse as are the chief views, there is reason to hope that, ere long, at least the outlines of a theory will be generally accepted. It should be remembered that the above-mentioned observers have all studied the muscles of invertebrates, and that it is by no means settled how much the muscular fibre may differ in the various groups of the animal kingdom.

According to Merkel, the fibre consists of two kinds of muscular substance proper, enclosed in a sheath of most delicate membrane, from which come transverse partitions, dividing the fibre into *elements*,  
Vol. LXXXIX. No. 10A

each of which consists of two chambers placed end to end. By way of illustration, let each element be represented by a fig-box or "drum," divided into an upper and lower part by a central partition. Now a pile of such boxes would (if transparent) present transverse divisions of two kinds: one a *middle-plate*, the partition in the middle of each box, and one an *end-plate* at the point of contact of two boxes. Such is the frame-work which we will suppose to be filled by two substances, one dark and one light, both being in each chamber in about equal quantities. When the muscle is at rest, the dark substance in each chamber is placed against the middle-plate and the light against the end-plate; thus a fibre presents alternate dark and light bands; in the middle of each of the latter is a dark stripe, the end-plate or surface of junction of two muscular elements, while in the middle of the dark band is a lighter stripe, the middle-plate, the central partition of an element. The polariscope shows that the light bands are singly and the dark doubly refractive. Engelmann has the same general idea of the framework, but is able, with high powers, to resolve into three the dark line in the white band. Sachs agrees in this with Engelmann, but does not admit the existence of a middle-plate.

So far, there are no glaring discrepancies between the views, but they appear when we come to the phenomena of contraction. These writers agree, further, that the dark substance is the contractile element, and is of greater density than the light; that, at a certain moderate degree of contraction, the stripes usually disappear, and the fibre appears homogeneous; and that, at full contraction, the white stripes are proportionally broader and the dark proportionally narrower than when at rest. According to Merkel, there is, during contraction, an intimate mixing of the substances in each element, causing the homogeneous appearance just mentioned, but towards the end of the act they disengage themselves and change places, the dark or doubly refracting substance accumulating on each side of the end-plates, the light going to the middle-plate. This occurs by the absorption of fluid from the light to the dark at the beginning of the act, and its return towards the end of it. Sachs is nearly of the same opinion, but Engelmann denies entirely that the substances change places. He holds that the fluid passes from the light to the dark, making the former darker and the latter lighter, except at its centre. Both parties claim that these views are confirmed by the appearances observed with polarized light. As to the subdivision of the primitive fibre into longitudinal fibrillæ, there is great doubt whether the latter are not merely *post-mortem* changes or the effects of re-agents.

The views of Mr. E. A. Schäfer, presented before the Royal Society last April, are entirely different from any of the above. According to him, voluntary muscular fibre consists of a homogeneous ground substance, in which very small bodies called muscle-rods are imbedded in transverse rows, the long axis of each rod being parallel with that of the muscle. Each muscle-rod has the shape of a minute dumb-bell, with globular heads, which are small in proportion to the shaft. When the fibre is moderately contracted, the dark band corresponds to the handles of the dumb-bells, and the light band to the opposed heads of those in two neighboring rows. There is, in the middle of the light band, a transverse row of dark dots, caused by the heads of the rods, while the light band is caused by the light they throw off. If the

fibre be slightly stretched, the line of dots appears double. When the fibre is in complete relaxation, the ends of the rods are so small that they do not project from the shafts; in fact, cannot be distinguished from the latter, and the striped appearance is gone. Nothing can be distinguished beyond a vague longitudinal striation. This state is apparently the same that Merkel and others ascribe to partial contraction. According to Schäfer, when the fibre contracts, the heads of the rods enlarge, press against one another, and encroach on the shafts. Owing to the increased refraction of the heads, the dark band disappears; but, owing to their crowding together, the row of dots is changed into a dark line. The polariscope shows that the ground substance is doubly and the rods singly refractive. The author's theory is, that the ground substance is the contractile element, and that the rods are simply elastic to restore the contracted fibre to its original shape.

### Bibliographical Notices.

*The Mechanism of the Vesicles of the Ear, and the Membrana Tympani.*

By H. HELMHOLTZ, Professor of Physiology in the University of Berlin, Prussia. Translated by ALBERT H. BUCK and NORMAND SMITH, of New York. New York: William Wood & Co.

THIS work of the distinguished German physicist, which first appeared in *Pflüger's Archiv für Physiologie*, in 1869, attempts to solve the physiological and mathematical questions which are involved in the transmission of sound through the conducting apparatus of the ear, and, ever since its appearance, has been accepted as the highest authority on that subject. The name of Helmholtz alone was sufficient to insure it a favorable reception, but clinical experience is daily confirming many of the views therein advanced, and to him will probably belong the credit of establishing a substantial basis to operative otology.

The book is divided into eight sections, viz.: 1st. Results due to the small dimensions of the auditory apparatus. 2nd. Anatomy of the membrana tympani. 3d. Attachments of the hammer. 4th. Attachments of the anvil. 5th. The movements of the stirrup. 6th. The concerted action of the bones of the ear. 7th. Mechanism of the membrana tympani. 8th. Mathematical appendix.

1. Helmholtz first discusses fully the theory first advanced by Ed. Weber, that the ossicles of the ear and petrous bone must be regarded as solid, incompressible bodies, and the labyrinth water as an incompressible fluid in the transmission of sound. For if, in an elastic medium infinitely extended, the dimensions of the vibrating mass are infinitely small compared with the length of the sound wave, the relative displacement of individual molecules of this mass must be infinitely small compared with the vibration of the whole mass, and, consequently, infinitely small compared with the length of the sound wave; they may therefore be disregarded, and the mass considered as vibrating as a whole, and not by its separate molecules. Solid elastic bodies, not infinitely extended, but with limits, against which the waves of sound may strike, are subject to the same law, provided that

no linear dimension of these bodies is very small compared with the other dimensions. But Kirchoff's studies on the equilibrium and vibration of an infinitely thin elastic rod, as applied by Helmholtz, prove that, in immovable elastic bodies with linear dimensions infinitely small compared with the wave-length, vibrations of a simple tone produce, upon two points of the elastic body, relative displacements which are infinitely small compared with the entire amplitude of the vibrations, or in other words, that such masses act exactly like solid bodies. As the wave-length of  $c_s$  is about 1,000 cm. in air, and 4,000 cm. in water, while the dimensions of the ear are each only a small fraction of a centimetre, it follows that the above rules apply to the conducting apparatus of the ear, the separate molecules of which suffer displacements among themselves relatively small, compared with the amplitude of the sound-wave; the separate bodies forming this apparatus act, then, absolutely as solid bodies. Again, if it were possible to set the small bones of the ear into regular vibration, they would produce tones far above the limits of our musical scale, and would be, consequently, imperceptible.

2. The second section is taken up with a minute description of the *membrana tympani* in the superior part of the tympanic ring, and the position of the membrane itself in its relation to the axis of the meatus. The neck of the hammer fits into a recess between two sharp projections of bone, which Helmholtz calls the Rivinian recess, and this recess is filled by the loose membrane known as the *membrana flacida Shrapnelli*. From the two projections of bone, quite tense bands of fibres pass to the anterior border of the hammer, thus suspending that bone. The funnel shape of the *membrana tympani* is given as it has been frequently described, and Helmholtz adopts the explanation of the light reflex, which has already been given by Politzer and others, namely, that it is due to the reflection back of light from that portion of the membrane which is perpendicular to the rays thrown against it. In regard to the membrane itself, the only peculiarities noticed are that the circular fibres are strongly developed into cords on the edges of the Rivinian segment. The fibres of which the membrane is composed are dense and unyielding, thus forming an inelastic and inextensible structure.

3. Gruber's descriptions of the attachment of the hammer to the *membrana tympani*, are accepted by Helmholtz: "near the lower end of the manubrium, the union between the bone and the thickened tissue of the *membrana tympani* is close; near the *processus brevis*, however, a loose layer intervenes between the bone and the membrane, or there may be a kind of incomplete joint-space, which is limited on both sides by the closer union between the periosteum of the hammer and the borders of the cartilaginous layer, together with the fibrous tissue of the *membrana tympani*."

The second and strongest attachment of the hammer is by a broad tendinous band arising from the hammer just below its head, and reaching as far as the stump of the *processus Folianus*, and attached to the *spina tympanica major*; this is called the *ligamentum mallei anterioris*. From the bony ridge which constitutes the lower edge of the hammer, another ligament passes to the wall of the tympanum, called the *lig. mallei externum*, but, inasmuch as its posterior fibres are very strongly developed and constitute the chief axis of rotation

of the hammer, Helmholtz gives this bundle of fibres the special name of lig. mallei posticum. This ligamentum posticum runs in the same direction as the strongest fibres of the ligamentum antierius, and these two constitute the axis on which the hammer moves. The other fibres of these ligaments serve to restrain the rotation of the manubrium outwards.

The tensor tympani muscle, which must be regarded as a powerful muscle on account of its penniform origin, is attached to the manubrium a little below the axis-ligaments, and consequently keep these stretched.

"The hammer, thus fastened, possesses, besides the tendon of the tensor tympani muscle, the following bands capable of retaining any rotation of the hammer outwards:—1. The middle and anterior fibres of the lig. externum. 2. The lig. superius. 3. The upper fibres of the lig. antierius. The membrana tympani itself acts as a band of restraint, against too strong rotation of the handle of the hammer inward."

4. The anvil has been always described as attached to the hammer by a capsular ligament, but the relation and form of the two articulating surfaces has never been accurately studied before. The minute studies of Helmholtz show that the articulating surfaces of the anvil and hammer form a pair of cogs which oppose the rotation of the hammer inwards, but allow it to be driven outwards without carrying the anvil with it. By this arrangement, when the hammer is rotated inwards, the cogs on the articulating surface of this bone, and those on the articulating surface of the anvil, fit firmly into each other, and the rotation is thus communicated to the anvil; if, however, the rotation of the hammer is outwards, the cogs separate, and the hammer alone moves outwards. This beautiful arrangement thus protects the delicate labyrinth of the ear from violent fluctuations of pressure, to which it would otherwise be liable whenever air was forced into the tympanum. Helmholtz estimates that the possible rotation of the two ossicles upon each other will hardly reach 5°.

If the connection between the anvil and stirrup is severed, the attachments of the ligaments of the anvil and the axis of rotation of that bone are such that the rotation of the handle of the hammer inwards must cause the head of the hammer to incline backwards, and must lift the anvil slightly from its position. The consequence of this movement is that the axis of the hammer is drawn away from a straight line, and the ligamentum mallei posticum is more tensely stretched.

The contraction of the tensor tympani muscle must render all the bands of the ossicles tense, with the exception of the ligamentum superius, and bring the anvil into a position where the cogs of its articulating surface fit the tightest into those of the hammer.

5. The capsule of the anvil-stirrup articulation contains more compact fibres on its inferior than on its other sides, and the attachments of the base of the stirrup in the oval window are more tense on the inferior than on the superior surface, and most compact at the posterior end. The result of such attachments is that the motion of the head of the stirrup, instead of being directly inwards and outwards, is somewhat downwards and backwards, and Helmholtz, by experiments, concludes that the highest possible excursions of the stirrup cannot exceed  $\frac{1}{8}$ — $\frac{1}{4}$  mm. Experiments also demonstrate that, when the



handle of the hammer is driven outwards, no strain is exerted on the stirrup, and consequently there is no risk of that bone being torn out of the oval-window. When the handle of the hammer is forced inwards, the head of the stirrup rises, owing to the unequal attachments of its base.

6. The three points, the end of the short process of the incus, the end of the long process of the incus, and the end of the manubrium, lie so nearly in a straight line, that these two bones constitute a simple lever, the fulcrum of which is the short process of the incus, the point at which force is applied is the end of the manubrium, while the third point of the lever is represented by the end of the long process of the incus and the stapes which is attached to it. Measurements of the different areas of this level show that the excursions of the end of the anvil and, consequently, of the stirrup are only  $\frac{2}{3}$  as great as those of the handle of the hammer, but the pressure is  $1\frac{1}{2}$  times as great as that exerted against the handle of the hammer.

The remaining portion of this section is taken up with an explanation of the peculiar buzzing or jarring sounds heard in the ear when certain notes are struck, resembling what is heard in musical instruments when something is loose. This phenomenon Helmholtz considers due to a rattling of the cogs of the anvil and hammer against each other; the anvil not being driven outwards during the outward phase of a vibration as far as the hammer, the cogs of the two bones are separated, and as the hammer returns on the inward phase of the vibration, it strikes against the anvil. A description of Helmholtz's model of the tympanic apparatus, now familiar to all physicists, follows.

7. The peculiarity of the membrana tympani lies in the fact that it is a curved tense membrane, its tension modified by the handle of the hammer which can draw it inwards. The peculiar curvature is due to the circular fibres, which draw the radial fibres towards one another. A mathematical discussion follows on the relative displacement of the surface of the membrana tympani and the end of the handle of the hammer, from which it follows that a relatively small amount of air-pressure on the membrane, will counterbalance a strong force acting on the handle, and the tension of the radial fibres can increase under slight changes in the air-pressure. In proportion then as the action of the air-pressure increases, the excursions of the handle become smaller, a fact proved by Helmholtz by experiments on preparations, where he found that the free central portions of the membrane were displaced more than three times as far as the tip of the handle.

The acoustic properties of membranes curved like the membrana tympani, have been but little studied, but Helmholtz proves, by experiment, that such a membrane gives a powerful resonance.

The last section of the work is taken up with a mathematical discussion of the mechanism of curved membranes.

The work of the translators is exceedingly well done, especially when we consider the terse, almost defective, style of the author, and they deserve the thanks of the profession for this addition to English scientific works.

J. O. G.



*Modern Medicine.* By WILLIAM O. JOHNSON, M. D. Re-printed from the North American Review, July, 1873. Pp. 39.

In this paper, the author discusses the position which medicine now holds in relation to the sciences, and describes some of the most important of the recent discoveries.

Without undervaluing the allied sciences, he insists on the impossibility of applying their laws to the varying condition of the system in disease. "Pure Science," he says, "admits no uncertain elements, but we cannot wait for her elimination of them; and when a physician, upon a balance of probabilities alone, acts, as he must, with a promptness flush with his decision, he is only like the navigator who trusts to his instincts in the tempest as readily as to his observations in the calm." He maintains that the practice of medicine is essentially an *art*, and quotes the remark of Sir William Gull, that "if it were possible to conjoin in one human intelligence, all that is now known of all other sciences, each knowledge would be compatible with entire ignorance of clinical medicine."

After an interesting discussion of this subject in its various branches, the author gives simple accounts of some of the uses of the sphygmograph, the thermometer, the ophthalmoscope, and of electricity, gives a slight sketch of Dr. George Johnson's contributions to our knowledge of cholera and a brief account of the controversy concerning Lörstøfer's corpuscles. The paper is well worth the attention of the profession, though written for the better class of general readers.

---

#### BOOKS AND PAMPHLETS RECEIVED.

*Handbook of Physiology.* By William Senhouse Kirkes, M.D. With two hundred and forty-eight illustrations. Philadelphia: Henry C. Lea. 1873. Pp. 656. A new American from the Eighth enlarged English Edition.

*Law and Intelligence in Nature, and the Improvement of the Race in accordance with Law.* By A. B. Palmer, A.M., M.D. Lansing: W. S. George & Co. 1873. Pp. 31.

*The First Annual Report of the Charlestown Free Dispensary, with the Act of Incorporation and By-Laws.* Charlestown: Caleb Rand. 1873. Pp. 20.

---

*TREATMENT AT ST. LUKE'S HOSPITAL, N. Y.—The Medical Record,* June 16, 1873, states that to reduce the temperature in such diseases as pneumonia, scarlatina, &c., cacao butter is employed. The body of the patient is to be thoroughly rubbed with it twice a day.

*Gunpowder Burns.*—An old prescription, supposed to be very serviceable in burns of this nature, is bichloride of mercury one grain to the ounce of water, to which one drachm of tincture of benzoin is added.

*Mosquito Netting as a Surgical Dressing.*—In those cases where it is desirable to keep up support and pressure, and at the same time permit the free escape of all discharges from the wound, or ulcer, or whatever it may be, the ordinary mosquito netting used for a bandage meets all the indications. If the discharge is considerable, a pad of oakum may be placed beneath the parts to secure the discharge, thus insuring perfect cleanliness.

---

**Boston Medical and Surgical Journal.**

---

BOSTON: THURSDAY, SEPTEMBER 4, 1873.

---

CONSIDERABLE interest has been manifested by the English journals in a trial which took place lately at the Wicklow Assizes, arising from a case of death from chloroform poisoning, occurring at Sir Patrick Dun's Hospital, in the service of Dr. Bennet. The facts of the case are about these. The patient, an unusually stout and powerful man, had sustained an injury to his toe of such severity as to render its removal necessary. He was accordingly placed upon the table the morning after his entrance, and chloroform was administered by Dr. Bennet's first assistant, a young physician, while one student took the pulse and a second kept his finger upon the femoral artery. The patient struggled violently, and the apparatus was removed two or three times from the man's face. It had been on altogether about three minutes, and three drachms of chloroform had been given, when respiration suddenly ceased, and simultaneously the pulsation of the radial and femoral arteries grew weaker and stopped. All efforts at resuscitation were in vain, and the universal testimony was that the man was dead at the moment that the dangerous symptoms were discovered.

The plaintiff endeavored to prove that sufficient precautions in the administration of the anæsthetic had not been taken, and some interesting facts were brought out by the testimony. It was stated that chloroform should not be given to produce the third stage of anæsthesia, as it is called, unless the heart be carefully examined beforehand, and a physician of experience hold the pulse. Moreover, the counsel for the plaintiff brought forward the advantages claimed for ether and the dangers of chloroform, although the discussion of this point was not as complete and satisfactory as one could have supposed or wished. On the other hand, the witnesses for the defence testified that it was not necessary in all cases to examine the heart, that the usual precautions had been taken, and that the man died from "a sudden arresting of the heart's action, the result of his idiosyncrasy."

While we think that the jury would have been guilty of an act of great injustice had they found for the plaintiff, we regret greatly that advantage was not taken of this opportunity to test the question of ether *versus* chloroform, and to determine to what degree men are liable for damages who confess that they use an agent dangerous to life, in spite of every precaution that can be taken, on the ground of its convenience. There does not, then, exist the man of whom it can be said that he does not possess an idiosyncrasy as fatal to him if he breathes chloroform as the most deadly poison.

It is not our purpose here to urge again at length the great advantages of ether in anaesthesia; but we cannot refrain from pointing out in this connection the striking difference in the amount of care requisite for the administration of the two agents. Who that has visited the European, and many American hospitals as well, when chloroform is given, has not been struck with the great amount of precaution found absolutely necessary for the safety of patients under its influence, with the anxiety of operating surgeons and the frequent interruptions to operations which the least intimation of danger gives rise to. We heard a distinguished Dublin surgeon once confess that there was not a moment during a surgical operation that one half his attention at least was not given to the patient's pulse and respiration. On the other hand, it is a well-known fact that ether can be given by the most unskilled hands, by the nurse, the ward-tenders, the patient's friends, if circumstances render it necessary, while the surgeon, confident in the safety of his patient, gives to the operation in question his undivided attention. Anxieties and delays are unknown. As a natural consequence of this, it can be pushed to a degree of insensibility, and used for a length of time that would make a chloroformist shudder, and may be given freely in the most trivial operations and examinations. Who can doubt that suffering humanity is not more benefited by such an agent as this, and who, once accustomed to its use, would abandon it for the INCONVENIENCE, to say nothing of the dangers, of chloroform.

---

We are in receipt of the first annual report of the Charlestown Free Dispensary, with the Act of Incorporation and By-Laws of the Charlestown Free Dispensary and Hospital. It is but little over a year ago that a dispensary was established in Charlestown, where hitherto there had been no organization, except that of the overseers of the poor, to meet the wants of a city of thirty thousand inhabitants. A few months later, it was thought advisable to add a small free hospital to the dispensary, and the legislature was petitioned for an act of incorporation. The act was approved, and the hospital work will be begun as soon as the necessary funds have been raised. Meanwhile, the success of the dispensary has become an established fact, as will be seen by the report of the Superintendent, Dr. Edward J. Forster. The character of the gentlemen who have this matter in hand, and the excellence of the medical staff will, we have no doubt, ensure the success of this much-needed charity.

---

THE PROPAGATION OF CHOLERA.—The discussion on cholera, in the section of Public Medicine, at the meeting of the British Medical Association, was well maintained and of considerable interest. The theory advanced by sanitary authorities of the Russian government, headed by Dr. Pelikan, that cholera is endemic in Russia, and that the disease, as seen at the present moment there and elsewhere on the Continent, deserves the name, not of Asiatic or Indian, but of European or Russian cholera, was not sustained. The experience of the English and Indian cholera authorities is directly opposed to this, their view being that the disease was sustained by fresh waves of the epidemic from India and Persia. Dr. Pettenkofer's views, that direct and indirect contagion was not the means of propagation of cholera from man to man, were constantly opposed, it being maintained that cholera is chiefly propagated by drinking water. Many of the speakers expressed strongly their belief in the communicability of cholera by direct contagion especially.

---

### Correspondence.

---

DOWN EAST, Aug. 10th, 1873.

MESSRS. EDITORS,—Back in these woods, we see strange things. A few days ago, I took out of the Post Office a long letter from New York, beginning "Dear Doctor," and ending "Your Friends Lilly & Phelan Evansville Indiana"—. No unnecessary punctuation, as you will observe. What was my surprise in calling on Dr. B., at Congregation Creek, to find that he had one, just like it, and he tells me that they have been sent widely through the country to all of us country doctors. On farther examination, we found it was only a *fac simile* letter. I had thought, before, that these gentlemen were very kind; and had wondered from whom they quoted that first line, which reads—"You ask, 'Is it worth my time to investigate?'" ; for I was confident that I never wrote it.

First, let me answer that question. Yes, if you think it worth while.

Secondly. Please say to Messrs. Lilly and Phelan that there's no use in putting the names of regular *recommenders* upon their circulars. We country doctors know how easy it is to get names in Boston and New York and Chicago, to put on circulars for general distribution. We've seen the names before, and don't think that the owners of them ever consider long before writing them down.

Thirdly. Please say to Messrs. Lilly & Phelan that, up in this country, we make cheese. We are in the habit of putting a little piece of one of the stomachs of the calf in milk, to make the cheese separate from the milk. If we leave it too long, and in a warm place, it begins to digest the milk.

"Well, what of that," says Messrs. L. & P. Why—

Fourthly, that we've been using "Nature's Solid Extract of Aromatic Liquid Pepsin," and simply prevented the cheese-press from catching dyspepsia. That's all.

Fifthly. Please say to the other country doctors, who don't know any more than we do, that pepsin can be very easily made an "Aromatic Liquid Pepsin" by cutting up a calf's rennet bag and bottling it up in half a gallon of pale sherry. It won't cost nearly so much, and mother used to feed her thirteen babies on it, at the rate of a teaspoonful to a cup of milk, with a little sugar mixed in, and a scratch of nutmeg on the top.

I am told that you can buy rennet bags cheap in Boston market. They are much better, I believe, after drying for weeks; and I should prefer them to pepsin. They will keep longer and better.

I am very truly yours,

RUSTICUS.

---

### Medical Miscellany.

---

THE death of Dr. W. O. Johnson was sudden and unexpected, and will be received with sincere regret by his many professional friends. His late article in the *North American Review*, a notice of which will be found in another column, has attracted very general attention, and is good evidence of his ability as a writer. The profession has lost in him an able man.

THE report of the Providence (R. I.) City Registrar for the month of July is of interest in connection with the new regulation, in regard to stale fruit or vegetables, adopted by our own City Board of Health. The danger from the use of such articles is greater in the month of August, and we cannot but think that the regulation is a wise one. Mrs. Winslow's soothing syrup tells its own tale. Those only who have charge of the sick poor of our large cities can tell how often "Mrs. Winslow" has soothed the little sufferers to that sleep "that knows no waking." We quote the following extracts:—

"Of the 55 decedents in July from diarrhœal diseases, 22 were American, and 33 of foreign parentage. According to age, there were 41 under 1 year, 10 from 1 to 2 years, and 4 over 40 years, making a total of 55 decedents from diarrhœal diseases. It is certain that these infants under 2 years of age, nearly all of them under 1 year, did not contract their disease from eating fruit and vegetables. We have several times, in past years, analyzed the mortality from diarrhœal diseases with precisely similar results. As we find, therefore, that considerably more than three-fourths of all the mortality from diarrhœal diseases, except Asiatic cholera, in Providence, is found in infants under two years of age, we are compelled to believe that, in this city at least, neither ripe nor unripe fruit and vegetables have any perceptible influence upon the mortality from these diseases. The infantile decedents from diarrhœal diseases are killed by the effects of heat and impure air, especially the latter.

"There were two deaths in July from poisoning. One was from an overdose of morphine; the other from Mrs. Winslow's soothing syrup. There ought to be some power to stop the sale of a rank poison like Mrs. Winslow's soothing syrup, under the false pretence that it is perfectly safe."

HOW TO CURE A COLD.—The whole fraternity of editors, and all their readers, owe a debt of gratitude to one of their members, the editor of the *Danbury News*, for a report of the following case, instituted by, though not practised on himself, but by one of his editorial corps. "He boiled a little boneset and horehound together, and drank freely of the tea before going to bed. The next day he took five pills, put one kind of plaster on his breast, another under his arms, and still another on his back. Under advice from an experienced old lady, he took all these off with an oyster-knife in the afternoon, and slapped on a mustard paste instead. His mother put some onion drafts on his feet, and gave him a lump of tar to swallow. Then he put some hot bricks to his feet and went to bed. Next morning, another old lady came in with a bottle of goose oil, and gave him a dose of it on a quill, and an aunt arrived about the same time from Bethel, with a bundle of sweet fern, which she made into a tea and gave him every half hour until noon, when he took a big dose of salts. After dinner, his wife, who had seen a fine old lady of great experience in doctoring, on Franklin Street, gave him two pills of her make, about the size of an English walnut and of similar shape, and two tablespoonfuls of home-made balsam to keep them down. Then he took a half-pint of hot rum, at the suggestion of an old sea-captain in the next house, and steamed his legs with an alcohol bath. At this crisis two of the neighbors arrived, who at once saw that his blood was out of order, and gave him half a gallon of spearmint tea and a big dose of castor oil. Before going to bed he took eight of a new kind of pill, wrapped about his neck a flannel soaked in hot vinegar and salt, and had feathers burnt on a shovel in his room. He is now thoroughly cured, and full of gratitude."—*The Sanitarian*.

AN interesting case is reported by M. Dieulafoy in which an infant, six hours old, was poisoned by a dessert spoonful of laudanum, and from whose stomach the poison was extracted, before it had taken fatal effect, by means of the pneumatic aspirator.

THE members of the New Hampshire Medical Society, accompanied by their wives, will visit Centre Harbor on Tuesday, September 16, and hold the second Semi-annual Meeting of the Association.

The North Essex Medical Society of Mass. have accepted their invitation to be present.

MR. JOHN WOOD, in his address on Surgery, in speaking of anæsthetics, remarks:—"We follow but tardily, in this old country, in that combination of pleasure with utility which has led lately the inventive genius of our transatlantic brethren to the association of æsthetics with anæsthetics, in the performance of operations under these agents to an obligato accompaniment upon the organ, and an appropriate address by a popular preacher improving the occasion on behalf of morals."

A DILEMMA FOR TEETOTALLERS.—We should like to ask the members of the legislature if they are prepared to continue the use of bread as an article of diet, in the face of the following fact, given in the *Medical Press and Circular*:—

In the *Chemical News* for May 30th, Mr. Bolus says that he has detected a small percentage of alcohol in six samples of new bread purchased at different shops in London. He says, "It is probable that the amount of alcohol contained in bread is too small to be of any dietetic importance, but it may perhaps be worth while to notice that forty 2-lb. loaves are about equal in alcoholic strength to an ordinary bottle of port."

FOREIGN BODIES IN THE STOMACH.—A case is recorded in *Il Raccoglitore Medico* (no. xvi. 1873), by Dr. Benedetti, in which a nun, aged twenty-two, after suffering for some days from symptoms of gastric fever, with obstinate vomiting, ejected from her stomach a brass cross, 1.3 inches long, the cross piece being 1.4 inches long. She remembered having swallowed it when she was nine years old. In the interval it had not produced any inconvenience. A case is also related in the *Imparziale* for June, in which a soldier swallowed a table-spoon. Severe dyspnoea followed; and in about three quarters of an hour the spoon was ejected by vomiting.—*London Medical Record*.

**MORTALITY IN MASSACHUSETTS.—Deaths in seventeen Cities and Towns for the week ending August 23, 1873.**

Boston, 153—Charlestown, 10—Worcester, 29—Lowell, 24—Milford, 1—Chelsea, 13—Cambridge, 19—Salem, 13—Lawrence, 18—Springfield, 9—Lynn, 27—Fitchburg, 12—Newburyport, 4—Somerville, 10—Fall River, 38—Haverhill, 7—Holyoke, 9. Total, 396.

*Prevalent Diseases.*—Cholera infantum, 103—consumption, 45—dysentery and diarrhoea, 20—typhoid fever, 19—scarlet fever, 13—cholera morbus, 8.

One death from smallpox occurred in Holyoke.

GEORGE DERBY, M.D.,  
Secretary of the State Board of Health.

**DEATHS IN BOSTON for the week ending Saturday, August 30th, 170. Males, 92; females, 78.** Accident, 3—abscess, 1—apoplexy, 1—inflammation of the bowels, 3—disease of the bladder, 1—disease of the brain, 6—calculus, 1—cancer, 2—cerebro-spinal meningitis, 1—cholera infantum, 47—cholera morbus, 1—consumption, 17—convulsions, 2—debility, 2—diarrhoea, 6—dropsy, 3—dropsy of the brain, 3—drowned, 1—diphtheria, 2—dysentery, 5—erysipelas, 1—scarlet fever, 7—typhoid fever, 5—disease of heart, 4—intemperance, 2—disease of kidneys, 4—disease of the liver, 2—congestion of lungs, 1—inflammation of the lungs, 6—marasmus, 8—pyæmia, 1—old age, 5—paralysis, 1—pleurisy, 1—premature birth, 1—peritonitis, 2—puerperal disease, 1—rheumatism, 1—scalded, 1—suicide, 1—disease of the spine, 1—tabes mesenterica, 1—teething, 1—unknown, 3—whooping cough, 1.

Under 5 years of age, 94—between 5 and 20 years, 17—between 20 and 40 years, 16—between 40 and 60 years, 27—over 60 years, 16. Born in the United States, 133—Ireland, 26—other places, 11.